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(54) **Data message storage and pick up service**

Datensendungspeicherungs und -abrufdienst

Service d'emmagasinage et de recherche de données de messages

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- **GLOBECOM'92,CONFERENCE RECORD, vol.2, 9 December 1992 pages 964 - 968, XP000357700 C. CHUNG ET AL 'IMPLEMENTATION OF A FAX DISTRIBUTION SYSTEM IN THE LOCAL AREA NETWORKS OF PCS'**
- **PATENT ABSTRACTS OF JAPAN vol. 12, no. 500 (E-699) 27 December 1988 & JP-A-63 211 843 (NEC CORP) 2 September 1988**

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EP 0 626 776 B1

Description

FIELD OF THE INVENTION

[0001] The invention relates to storing a user's data message in a telecommunications network for delivery to an intended caller.

Background of the Invention

[0002] In a facsimile store and forward system, a subscriber may place a call thereto and enter the telephone number of a facsimile machine that is to receive a facsimile. The subscriber may then transmit the facsimile to the system, which stores the received facsimile in associated memory. Thereafter, the facsimile system places a telephone call to the receiving facsimile machine and transmits the subscriber's facsimile thereto. One aspect of such an arrangement is that the sender of a facsimile has to know the telephone number of the receiving facsimile machine. Disadvantageously, in certain situations it may be difficult to ascertain the telephone number of a facsimile machine associated with an intended recipient. This is especially true if the recipient happens to be travelling.

[0003] US-A-5 168 371 discloses a picture image processing system that includes a storage means, for temporarily storing and accumulating input data and job parameters, and an enciphered identification key manual input means for entering a user's enciphered identification key. The system permits input of an enciphered identification key for a picture image data file, and subsequently permits the output of a picture image data file with a enciphered identification key only after a subsequent user has input the correct enciphered identification key. Job parameters for a stored image, including the enciphered identification key code, are input into the system together with the stored image.

[0004] "Globecom '92 Conference Record" Vol 2, 9 December 1992, pages 964-968, Edward C Chung et al, Implementation of a Fax Distribution System in the Local Area Networks of PCs, discloses a system having an on-demand fax documents retrieval service. A user who gains access to the service selects a particular document by a pre-set catalogue number. The fax server of the system searches a document database using the selected catalogue number as a key. When the document is found, the service faxes the document to the user.

Summary of the Invention

[0005] The present invention provides a method of providing a data message delivery service in a telecommunications network characterised by the steps of:

responsive to receipt of a call from a user of the data message delivery service desiring to send a data message to an intended recipient, generating a unique identifier and supplying the identifier to the user, the identifier being other than an address of a memory location,

responsive to receipt of the data message from the user, storing the data message in memory in association with the unique identifier not then stored in memory in association with any other stored message, and

responsive to receipt of the unique identifier from a subsequent caller, unloading the data message and supplying it to the subsequent caller via the telecommunication network.

[0006] Preferred features of the invention are set out in the dependent claims.

Brief Description of the Drawings

[0007] In the drawings:

FIG. 1 is a broad block diagram of a telecommunications network in which the principles of the invention may be practised;

FIG. 2 is an illustrative example of a data record that is associated with a stored data message;

FIG. 3 is an illustrative example of a record that is associated with a respective subscriber of the inventive service;

FIGs. 4-6 illustrate in flow chart form the program which implements the invention in service 175 of Fig 1; and

FIG. 7 is an illustrative example of a table that is used to locate the memory location at which a particular data message is stored.

Detailed Description

[0008] Turning now to FIG. 1, there is shown telecommunications network 200, which may be, for example, the AT&T public switched network, that provides a number of different calling services for its subscribers, e.g., the subscribers associated with station sets S1, S2 and S3, respectively.

[0009] Network 200 includes, inter alia, a plurality of interconnected Toll Switching (TS) offices, two of which are shown in the FIG., namely TS 105 and 110. Such toll switches are also interconnected via the well-known Common Channel Signaling network (CCS) 150, which the toll switches use to exchange data messages with one another in order to establish a telephone connection from an originating toll switch, e.g., TS 105, to a destination toll switch, e.g., TS 110.

[0010] Each toll switch, e.g., TS 105, is also connected to one or more Central Offices (CO), such as CO 25. As is well-known, a CO is an arranged to connect a calling telephone station (e.g., S1) which has dialed a particular telephone number outside of the calling area

served by the CO to an associated toll switch, e.g., TS 105. A CO is also arranged to connect calls that it receives from an associated toll switch (destination switch) to a called station, e.g., station S1.

[0011] Network 200 further includes a number of centralized databases commonly referred to as Network Control Points (NCP), which support the provision of various network 200 services, such as the well-known 800 and 900 calling services. Such NCP's for example, NCP 225, are interconnected with the toll switches via CCS network 150 and various signal transfer points, such as Signal Transfer Point (STP) 220. One function of an NCP is to translate a 800 or 900 service telephone number that it receives from an originating toll switch, e. g., TS 105, into a telephone number specified by the business customer associated with the 800 (900) service telephone number. The NCP then returns, inter alia, the translated telephone number and a routing number that may be used to identify a destination toll switch, e. g., TS 110, to which the 800 or 900 service call may be forwarded.

[0012] Network 200 also includes data message service 175 which implements, in accord with an aspect of the invention, a "hold for pickup" function in the delivery of a data message, e.g., a facsimile, data file or digitized image, to an intended recipient Specifically, service 175 includes voice interactive system 180, which may be, for example, the Conversant™ (trademark of AT&T) voice interactive system (CVIS) available from AT&T, to present a voice interface to a caller. Service 175 also includes a number of databases 185, 190 and 195. Service 175, more particularly, stores a data message that it receives from a subscriber in database 185 for a predetermined period of time, e.g., one week. If a stored data message is not supplied to a caller within one week in the manner discussed below, then the data message is transferred to archive database 190. Database 195, on the other hand, is used for administrative purposes, as discussed below.

[0013] The storage of a data message in either database 185 or 190 is tracked using a data record that is created at the time the message is received from an associated subscriber. Service 175 stores the data record in database 195 and uses it to identify the memory location of a stored data message. A data record is also used for other reasons, as will be explained below. An example of such a data record is shown in FIG. 2, in which the value of a unique confirmation code associated with the stored message is entered in field 307-1. The memory location at which the data message is stored is entered in field 309. In accord with an aspect of the invention, the confirmation code, or number, is used to confirm that a caller is permitted to access the stored data message, as will be explained below in detail. Other information, or data, is entered in other fields of a data record. For example, the date and time that a data message is received from a subscriber is entered in field 303. The associated subscriber's telephone number (e.g., ANI), Personal Identification Number (PIN)), confirmation telephone number are entered in fields 301, 302, and 305, respectively. The number of recipients (NOR) that will be receiving the subscriber's data message is stored in field 304. In accord with an aspect of the invention, if the number of recipients is greater than one, then a confirmation number may be associated with each such recipient, in which the additional confirmation numbers are respectively entered in fields 307-2 through 307-N, as will be explained below. The telephone number of a caller who places a call to service 175 and who enters the confirmation number of the associated stored data message is entered in 308-1. If more than one caller receives a copy of the data message as indicated by the value entered in field 304, then the telephone numbers of those callers are stored in fields 308-2 through 308-N, respectively.

[0014] As mentioned above, a PIN is stored in a data record associated with a stored data message. The PIN is also stored in a service 175 record associated with the subscriber. An example of a subscriber record is shown in FIG. 3, in which the subscriber's name, PIN and account number are respectively stored in fields 401 through 403 of the associated record 400. The subscriber's telephone number (ANI) is stored in field 404. A confirmation number (CNFMN) and an associated delayed entry flag (FLG1) are respectively entered in fields 405 and 406 when the associated subscriber delays the sending of a data message that will be identified by the number entered in field 405, as will be explained below.

[0015] As mentioned above, service 175 generates a unique confirmation number for each data message that it stores in its associated memory. In accord with an aspect of the invention, service 175 generates a random number of sufficient length, e.g., twelve digits, on the fly and uses that number as a confirmation number. The use of a random number as a confirmation number assures to a certain degree that the number will not be compromised by a fraudulent caller. As an aspect of the invention, service 175 may be arranged so that it varies the number of digits forming a confirmation number in which the variation is based on the level of traffic (ie, number of data messages) that is handled by service 175 within a predetermined period of time, for example, one week. In this way, service 175 may generate a random number having 12 digits when the level of traffic is high and generate a random number having fewer digits (e.g., 10) when the level of traffic is moderate. As such, the number of digits forming a confirmation number may be a function of the number of data messages (traffic) processed by service 175.

[0016] With the foregoing in mind we now discuss the operation of service 175 in the context of (a) receiving a facsimile from a subscriber, (b) storing the facsimile in database 185 and (c) thereafter supplying the facsimile to a caller who enters (1) the associated confirmation number and (2) a telephone number of the caller's facsimile machine. In doing so, reference will be made to

FIGs. 1, 3, 4 and 5. Specifically, assume that the subscriber associated with station S1 and Facsimile Machine (FM) 10 desires to send via service 175 a facsimile to the person associated with station set S2 and FM 15. To do so, the station S1 subscriber places a telephone call to service 175 by dialling a telephone number associated with service 175. Such a telephone number may be, for example, an 800 service number such as 1-800-send-fax. (In accord with an aspect of the invention, a person who does not subscribe to the data message service 175 may, nevertheless, take advantage of that service. In such a situation, the person may place a call to another service 175 number, e.g., a 900 service telephone number, that is reserved for casual users, as will be discussed below).

[0017] When the station S1 subscriber dials the aforementioned 800 service number, then CO50, operating in a conventional manner and in conjunction with network 200 (i.e., toll switch 105), forwards the call to an idle port of a group of service 175 port circuits associated with the called number. Such port circuits are represented in FIG. 1 by path 107. CVIS 180, responsive to receipt of the 800 service call (block 400), prompts the caller to enter a PIN (block 401, FIG. 4). When the caller does so, then CVIS 180 obtains the subscriber's service record from database 195. CVIS 180 then determines if the entered PIN is valid (block 402). If the entered PIN is not valid, then CVIS determines if the received entry represents the caller's second attempt to enter a valid PIN. If that is the case, then CVIS concludes that it ought to terminate the call (block 414) and proceeds to execute that function in a conventional manner (block 415). If CVIS determines that is not the case, then it reprompts the caller to enter a PIN (block 401) and then proceeds as discussed. Assuming that the entered PIN is valid, then CVIS 180 obtains a copy of the associated subscriber record and checks the contents of field 406 to see if it contains a delayed transmission flag (block 403). Assuming that is not the case, then CVIS 180 prompts (block 404) the subscriber (caller) to enter the number of recipients (NOR) that will be receiving the subscriber's facsimile. Assuming that the subscriber enters the digit one, then CVIS 180 enters that number in field 407 of the subscriber's associated record 400. CVIS 180 then generates a unique confirmation number and also enters it in the associated record 400 (block 405). (As mentioned above, the confirmation number may be entered by the subscriber, or caller.) CVIS 180 then sends (announces) the unique confirmation number in a voice format to the subscriber via path 107 (block 406). CVIS 180 then prompts the subscriber to transmit the facsimile (block 407). If the subscriber is not ready to transmit and, in response to the latter prompt, enters a predetermined character, e.g., the pound (#) sign, then CVIS 180 enters a delayed transmission flag in field 406 of the subscriber's record 400 (block 408). At this point, the subscriber may terminate the connection by "hanging up." Thereafter, when the subscriber places a call to service 175, CVIS 180 will find that the subscriber's record contains a delayed transmission flag (block 403). As such, CVIS 180, responsive to receipt of the subscriber's PIN, then prompts the subscriber to determine if the transaction relates to the delayed transmission of a facsimile. If that is the case, then CVIS prompts the subscriber to enter the confirmation number of the facsimile that CVIS 180 previously sent to the subscriber (block 411). Upon receipt of the latter number CVIS 180 compares that number with the confirmation number that was entered previously in the subscriber's record (block 412). If the comparison turns out to be true, then CVIS 180 prompts the subscriber to begin the transmission of the facsimile by returning a conventional facsimile carrier tone.

[0018] If the comparison fails, then CVIS 180 again prompts the subscriber to enter the confirmation number and re-executes the comparison function upon receipt thereof. If the latter comparison also fails, (block 413) then CVIS 180 terminates the connection.

[0019] If in the above case the subscriber is ready to transmit the facsimile and enters a predetermined character, e.g., the star (*) sign, in response to the CVIS 180 prompt, then CVIS 180 transmits a facsimile carrier tone to indicate that it is ready to receive the facsimile. At that point the station S1 subscriber may, in a conventional manner, switch the telephone connection from station S1 to FM 10. FM 10 responsive to the carrier tone exchanges signals with service 174 to negotiate (block 409) a transmission mode with service 175, as is done in a conventional manner. When the transmission mode has been so negotiated then FM 10 begins transmitting the subscriber's facsimile.

[0020] CVIS 180 responsive to receipt of the facsimile stores it in database 185 (block 410). In doing so, CVIS 180 creates a data record 300 (discussed above in connection with FIG. 2) associated with the received facsimile. In addition, CVIS 180 stores the associated confirmation number and database 195 memory address at which the associated data record 300 is stored in a list. An example of such a list, which is also stored in database 195, is shown in FIG. 7. In particular, each line of list 500 includes a confirmation number, e.g, CNFNx, in column 501 and an associated memory (185 or 190) address, e.g., as represented by AAA, ZZZ etc., in column 502.

[0021] Returning to FIG. 1, CVIS 180 also enters in the associated data record 300 (a) a time and date stamp (b) the number of callers that will receive the subscriber's facsimile, (c) subscriber's PIN, and (d) confirmation telephone number, as discussed above

[0022] Following the transmission of the facsimile, the station S1 subscriber may then place a call to the intended recipient of the facsimile, e.g., a person associated with station S2, and supply the facsimile confirmation number to that person. The station S2 caller may then retrieve the facsimile from service 175 by placing a call to service 175 using a particular telephone

number, e.g., a second 800 service telephone number such as 1-800-geta-fax. When the station S2 caller does so, CO 75 operating in conjunction with toll switch 110 forwards the call to an idle port circuit of a group of service 175 port circuits associated with the latter telephone number. The latter group of port circuits are represented in FIG. 1 by path 108. CVIS 180, responsive to receipt of the incoming call (block 500, FIG. 5) via path 108, prompts the caller to enter a facsimile confirmation number (block 501). When the station S2 caller does so, CVIS 180 checks (block 502) the entered number to determine if it is stored in the aforementioned list 500 (FIG. 8) of confirmation numbers. If the entered confirmation is not valid, then CVIS 180 again prompts the caller to enter a confirmation number. If the latter entry is again found to be invalid (blocks 502 and 507) then CVIS 180 terminates the call (block 506). If the entered confirmation number is valid, then CVIS 180 uses the database 195 address associated with the confirmation number in list 500 to unload the associated facsimile data record from database 195. CVIS 180 then prompts (block 504) the caller to enter the telephone number of the facsimile machine that will receive the facsimile. When the caller does so, CVIS 180 stores the entered telephone number, e.g., telephone number of FM 10, in the associated facsimile data record, as discussed above. CVIS 180 then announces (block 505) that the facsimile will be transmitted to that telephone number and terminates (block 506) the telephone connection.

[0023] Following the foregoing, CVIS 180 (block 600, FIG. 6) accesses one of its idle port circuits and places a call (block 601) to the entered telephone number, i.e., facsimile machine 15. FM 15 in a conventional manner answers the incoming call by returning the aforementioned carrier tone. At that point, CVIS 180 and FM 15 exchange signals to establish a mutually agreeable facsimile transmission mode (blocks 602,603 and 604), as mentioned above. When a proper mode is established, then CVIS 180 transmits the facsimile (block 605) associated with the received confirmation number. CVIS 180 then decrements (block 606) the contents of field 304 of the associated record 300. If the resulting value of such contents turns out to be zero (block 607), then CVIS 180 erases (block 608) the facsimile confirmation number and associated database 195 address from list 500 as a way of noting that the facsimile has been transmitted to the intended recipient. If the value of NOR is greater than zero, then CVIS 180 terminates the call (block 612) without performing the aforementioned erasing function.

[0024] When the subscriber's facsimile has been delivered to the station S2 caller, CVIS 180 may then confirm delivery of the facsimile to the station S1 subscriber. To do so, CVIS 180 unloads (block 609) the confirmation telephone number from the data record associated with the delivered facsimile and places a telephone call thereto (block 610). When the call is answered, CVIS 180 transmits a voice announcement (block 611) indicating that the facsimile associated with confirmation number xxxxxx has been delivered, where xxxxxx represents the first n digits of the facsimile confirmation number. Alternatively, the subscriber may dial a telephone number, e.g., 1-800-chek-fax, associated with service 175 to determine the status of a particular facsimile. Specifically, if the station S1 subscriber dials that telephone number, then a telephone call is presented to CVIS 180 via a telephone connection including CO 25, TS 105, and a particular path 107 telephone circuit, CVIS 180, responsive to receipt of the call via that circuit, prompts the caller to enter his/her PIN. If the PIN is valid, then CVIS 180 prompts the caller to enter the first n digits e.g., six digits, of the confirmation number of the pertinent facsimile. When the subscriber does so, then CVIS 180 announces the status of the associated facsimile, i.e., whether or not the facsimile has been retrieved by a recipient, CVIS 180 may then repeat the above prompt to allow the subscriber to ascertain the status of another facsimile associated with the subscriber.

[0025] If in the above example, the station S1 subscriber indicates that the facsimile is to be delivered to n, e.g., two, recipients, then CVIS 180 saves that number for entry in field 304 of the associated facsimile data record 300 (FIG. 2). In addition, CVIS 180 prompts the subscriber to determine if a facsimile confirmation number is to be generated for each recipient. If the station S1 subscriber responds negatively, then CVIS generates just one confirmation number and stores the number in the manner described above. Accordingly, when a caller, e.g., the station S2 caller, places a call to service 175 for the purpose of obtaining a copy of the facsimile, then CVIS 180, upon obtaining the facsimile record, checks the value confirmation in field 304 to see if it is greater than zero. If it is, then CVIS 180 sends a copy of the associated facsimile to the caller in the manner described above. CVIS 180 then decrements the value stored in field 304 of record 300, as mentioned above, and does so each time a caller obtains a copy of the associated facsimile. When that value reaches zero, then CVIS 180 places a call to the subscriber to confirm delivery of the facsimile, as described above. In this way, CVIS 180 prevents the sending of a copy of the facsimile to another caller, even though the caller enters the correct confirmation number associated with the facsimile.

[0026] If the station S1 subscriber desires a confirmation number for each recipient and thus responds affirmatively to the above-mentioned prompt, then CVIS 180 generates n confirmation numbers (blocks 405 and 406, FIG. 4) and transmits them as they are generated to the station S1 subscriber. In addition, CVIS 180 enters each such confirmation number in list 500 in association with the database 195 memory address that will be assigned to the associated data message record 300. CVIS will also store the confirmation numbers in respective ones of fields 307-1 through 307-N of the associated record 300. Thereafter, when the stored facsimile is delivered

to a recipient, e.g., the station S2 caller, CVIS 180 decrements the value contained in field 304 of the associated data record 300, as mentioned above. CVIS 180 also erases the confirmation number that the caller entered from list 500 so that the number cannot be used to obtain another copy of the facsimile. As discussed above, the delivery of the associated facsimile will thus be terminated when the value in field 304 of the associated record 300 reaches zero, at which time the last of the confirmation numbers generated for the facsimile should have been removed from list 500.

[0027] CVIS 180, in accord with a feature of the invention, terminates a call when the caller fails to enter a valid confirmation number on the second try (block 507, FIG. 5). In addition, CVIS 180 associates the calling number associated with the unsuccessful attempt to enter a valid confirmation number with the current date and time and stores the result in a particular list (not shown). CVIS 180 then scans the list to determine if the latter telephone number is already contained in the list If it is, then CVIS assembles all entries of the telephone number in the list If the number of such entries for a particular duration of time, e.g., 24 hours, exceeds a predetermined threshold, e.g., a value of ten, then CVIS 180 (a) notifies a service 175 administrator thereof and (b) blocks all calls originating from that telephone number from accessing service 175. Alternatively, rather than blocking such calls, service 175 may be arranged so that it increases exponentially its response time in the processing of a call associated with such a telephone number and/or invalid confirmation number each time a call from that telephone number is received at service 175. In this way a so-called "hacker" who is attempting to gain access to a particular facsimile will be frustrated by the ever-increasing CVIS 180 response time to the "hacker's" calls and/or inquiries.

[0028] As an aspect of the invention, the services provided by service 175 may be offered to a nonsubscriber ("casual user"). In particular, a casual user may place a call to service 175 by dialing a particular telephone number, e.g., a 900 service number such as 1-900-send-fax, which identifies the status of the caller as being a casual user. If a caller, e.g., the caller associated with station S3 (FIG. 1), dials that telephone number, then CO 75 operating in conjunction with toll switch 110 forwards the call to an idle port circuit of a group of service 175 port circuits associated with the dialed telephone number. The latter group of port circuits is represented in FIG. 1 by path 108. In response to a call received over that port, CVIS 180 proceeds as though the call originated from a subscriber as discussed above. However, in this instance, CVIS 180 creates 8 billing record containing the (a) dialed telephone number, (b) callers ANI, and (c) date and starting time of the transaction. CVIS 180 then proceeds in the manner discussed above in order to receive the casual user's facsimile. When CVIS 180 completes the transaction, it then enters the date and ending time of the transaction in the billing record. Such a billing record is thereafter supplied to a centralized billing center which generates a "telephone bill" for the use of service 175 by the station S3 casual user.

[0029] In the event that a casual user subscribes to a service which blocks the placing of a 900 call via that user's telephone station set, then the user may place a call to service 175 using an alternate telephone number, for example, 1-800-paya-fax. However, in this instance the cost of the transaction is billed directly to the caller's credit or calling card and the caller is prompted to enter his/her credit, or calling, card number. Upon receipt of the number, CVIS 180 sends the number via a direct telephone connection to a credit card validation bureau (not shown) for validation. The bureau, in turn, returns an answer indicating whether or not the entered number is valid. If it is, then CVIS 180 proceeds as discussed above, except that it charges the cost of the transaction to the entered credit/calling card number. If the entered number is not valid, then CVIS 180 announces that fact and terminates the call.

[0030] It can be appreciated from the foregoing that service 175 may be readily adapted to provide a "hold-for-pickup" service for data files. In this arrangement, a subscriber or casual user may transmit a data file to service 175 via an associated data terminal, e.g., terminal 5 (FIG. 1) having telephony capabilities. Similarly, a caller may access the file and have it downloaded from service 175 to the caller's data terminal by entering a confirmation identifier, e.g., a number, associated with the sought-alter data file. Such a service may be readily implemented in service 175 by replacing CVIS 180 with a host computer, such as, for example, a model 3450 computer available from the NCR corporation. In such an implementation, the host computer transmits prompts for display on the display of the subscriber's (casual user's) data terminal. The subscriber, in turn, enters an appropriate response (e.g., PIN) via the keyboard associated with the terminal.

[0031] The foregoing is merely illustrative of the principles of the invention. Those skilled in the art will be able to devise numerous arrangements, which, although not explicitly shown or described herein, nevertheless embody those principles that are within the scope of the invention. For example, CVIS 180 may be arranged to deliver a confirmation number to a recipient or to a recipient's voice mail box or pager. CVIS 180 may be further arranged so that after it verbally supplies a confirmation number to the subscriber it then prompts the subscriber to repeat the number in a conventional manner, i.e., by pressing respective station set keypad numbers. As another example, service 175 may be arranged so that it delivers automatically a stored data message to intended recipients via electronic mail. Further, service 175 may be arranged so that it receives a data message via electronic mail, returns a confirmation number to the subscriber via that media and delivers the data message via facsimile. In addition, although the in-

vention was discussed in terms of being deployed in a telecommunications network, it may be advantageous in certain situations to deploy the inventive service in association with so-called customer premises equipment, e.g., a private branch exchange, or an adjunct associated with a facsimile machine. As another example, service 175 may be arranged so that it also confirms the nondelivery of a subscriber's facsimile. For example, if the facsimile is not delivered within a predetermined period of time, e.g., one day or a period set by the subscriber, then service 175 places a call to the subscriber and announces such nondelivery. As another example, CVIS 180 may be arranged to include voice recognition capability so that CVIS 180 may recognize a caller's'/ subscriber's verbal inquiry or response, such as a caller's spoken credit card number.

Claims

1. A method of providing a data message delivery service in a telecommunication network CHARACTERISED BY the steps of

   responsive to receipt of a call from a user of the data message delivery service desiring to send a data message to an intended recipient, generating a unique identifier by the data message delivery service and supplying the identifier to the user, the identifier being other than an address of a memory location,
   responsive to receipt of the data message from the user, storing the data message in memory in association with the unique identifier not then stored in memory in association with any other stored message, and
   responsive to receipt of the unique identifier from a subsequent caller, unloading the data message and supplying it to the subsequent caller via the telecommunications network.

2. The method of claim 1 wherein the unique identifier is a variable-length sequence of digits, the length being based on the number of calls being processed by the message delivery service within a predetermined period of time.

3. The method of claim 1 or 2 wherein the subsequent caller is one of a plurality of subsequent callers each having access to the unique identifier, the method FURTHER CHARACTERISED BY the steps of

   prompting the user to enter the number of intended recipients of the data message,
   and
   supplying the data message to only a like number of subsequent callers who enter the unique identifier.

4. The method set forth in claim 1 or 2 wherein the subsequent caller is one of a plurality of subsequent callers, the method FURTHER CHARACTERISED BY the steps of

   prompting the user to enter the number of intended recipients of the data message,
   responsive to the number of recipients of the data message entered by the user, generating a plurality of unique identifiers, the plurality being equal to the number of intended recipients, each identifier being other than an address of a memory location, and
   supplying the data message to respective ones of subsequent callers who enter a respective one of the plurality of unique identifiers.

5. The method set forth in any preceding claim further CHARACTERISED BY the step of responsive to supplying the data message to the subsequent caller(s), placing a telephone call to the user and announcing that the data message has been delivered to the subsequent caller(s).

6. The method set forth in claim 5 wherein the step of announcing is further CHARACTERISED BY the step of identifying the identifier associated with the delivery data message.

7. The method set forth in any preceding claim FURTHER CHARACTERISED BY the step of, responsive to a receipt of a subsequent call from the user and receipt of the unique identifier(s), supplying to the user information indicative of whether the associated data message has been supplied to the subsequent caller(s).

Patentansprüche

1. Verfahren zum Bereitstellen eines Datennachrichten-Lieferungsservice in einem Telekommunikationsnetzwerk, gekennzeichnet durch folgende Schritte:

   Erzeugen eines eindeutigen Identifizierers durch den Datennachrichten-Lieferservice und Zuführen des Identifizierers zu dem Benutzer, wobei der Identifizierer von einer Adresse eines Speicherorts verschieden ist, ansprechend auf den Empfang eines Anrufs von einem Benutzer des Datennachrichten-Lieferservice, welcher das Senden einer Datennachricht an einen vorgesehenen Empfänger wünscht,
   Speichern der Datennachricht im Speicher in Verbindung mit dem eindeutigen Identifizierer, welcher dann nicht im Speicher in Verbindung mit irgendeiner weiteren gespeicherten Nach-

richt gespeichert wird, ansprechend auf den Empfang der Datennachricht von dem Benutzer, und
Entladen der Datennachricht und Liefern derselben an den darauffolgenden Anrufer über das Telekommunikationsnetzwerk ansprechend auf den Empfang des eindeutigen Identifizierers von einem darauffolgenden Anrufer.

2. Verfahren nach Anspruch 1, wobei der eindeutige Identifizierer eine Ziffernsequenz mit variabler Länge ist, wobei die Länge auf der Anzahl von Anrufen basiert, welche von dem Nachrichten-Lieferservice innerhalb einer vorbestimmten Zeitspanne verarbeitet wird.

3. Verfahren nach Anspruch 1 oder 2, wobei der darauffolgende Anrufer einer einer Vielzahl von darauffolgenden Anrufern ist, welche jeweils Zugang zu dem eindeutigen Identifizierer haben, wobei das Verfahren weiterhin durch folgende Schritte gekennzeichnet ist:

Auffordern des Benutzers zum Eingeben der Nummer vorgesehener Empfänger der Datennachricht, und
Liefern der Datennachricht an nur eine gleiche Nummer von darauffolgenden Anrufern, welche den eindeutigen Identifizierer eingeben.

4. Verfahren nach Anspruch 1 oder 2, wobei der darauffolgende Anrufer einer einer Vielzahl von darauffolgenden Anrufern ist, wobei das Verfahren weiterhin durch folgende Schritte gekennzeichnet ist:

Auffordern des Benutzers zum Eingeben der Anzahl vorgesehener Empfänger der Datennachricht,
Erzeugen einer Vielzahl von eindeutigen Identifizierern, wobei die Vielzahl gleich der Anzahl von vorgesehenen Empfängern ist, wobei jeder Identifizierer von einer Adresse eines Speicherorts verschieden ist, ansprechend auf die Anzahl von Empfängern der Datennachricht, welche durch den Benutzer eingegeben wird, und
Liefern der Datennachricht an jeweilige der darauffolgenden Anrufer, welche eine jeweilige der Vielzahl von eindeutigen Identifizierern eingeben.

5. Verfahren nach einem der vorhergehenden Ansprüche, weiterhin gekennzeichnet durch den Schritt des Setzens eines Telefonanrufs an den Benutzer und Anzeigen, daß die Datennachricht an den oder die darauffolgenden Anrufer geliefert worden ist, ansprechend auf das Liefern der Datennachricht an den oder die darauffolgenden Anrufer.

6. Verfahren nach Anspruch 5, wobei der Schritt des Anzeigens weiterhin gekennzeichnet ist durch den Schritt des Identifizierens des Identifizierers, der mit der Lieferdatennachricht verbunden ist.

7. Verfahren nach einem der vorhergehenden Ansprüche, welches weiterhin durch folgenden Schritt gekennzeichnet, ist:

Liefern von Informationen an den Benutzer, welche anzeigen, ob die zugehörige Datennachricht an den oder die darauffolgenden Anrufer geliefert worden ist, ansprechend auf den Empfang eines darauffolgenden Anrufes von dem Benutzer und Empfang des oder der eindeutigen Identifizierer.

Revendications

1. Procédé de fourniture d'un service de délivrance de message de données dans un réseau de télécommunication, caractérisé par les étapes de:

en réponse à la réception d'un appel en provenance d'un utilisateur du service de délivrance de message de données souhaitant envoyer un message de données à un destinataire souhaité, génération d'un unique identificateur par le service de délivrance de message de données et fourniture de l'identificateur à l'utilisateur, l'identificateur étant autre qu'une adresse d'un emplacement de mémoire;
en réponse à la réception du message de données en provenance de l'utilisateur, stockage du message de données en mémoire en association avec l'unique identificateur non alors stocké en mémoire en association avec un quelconque autre message stocké; et
en réponse à la réception de l'unique identificateur en provenance d'un appelant suivant, déchargement du message de données et fourniture de celui-ci à l'appelant suivant via le réseau de télécommunication.

2. Procédé selon la revendication 1, dans lequel l'unique identificateur est une séquence d'éléments numériques de longueur variable, la longueur étant basée sur le nombre d'appels qui sont traités par le service de délivrance de message dans une période temporelle prédéterminée.

3. Procédé selon la revendication 1 ou 2, dans lequel l'appelant suivant est l'un d'une pluralité d'appelants suivants dont chacun a accès à l'unique identificateur, le procédé étant en outre caractérisé par les étapes de:

demande à l'utilisateur d'entrer le nombre de

destinataires souhaités du message de données; et
fourniture du message de données à seulement un même nombre d'appelants suivants qui entrent l'unique identificateur.

4. Procédé selon la revendication 1 ou 2, dans lequel l'appelant suivant est l'un d'une pluralité d'appelants suivants, le procédé étant en outre caractérisé par les étapes de:

demande à l'utilisateur d'entrer le nombre de destinataires souhaités du message de données;
en réponse au nombre de destinataires du message de données entré par l'utilisateur, génération d'une pluralité d'uniques identificateurs, la pluralité étant égale au nombre de destinataires souhaités, chaque identificateur étant autre qu'une adresse d'un emplacement de mémoire; et
fourniture du message de données à ceux respectifs des appelants suivants qui entrent l'un respectif de la pluralité d'uniques identificateurs.

5. Procédé selon l'une quelconque des revendications précédentes, caractérisé en outre par l'étape de, en réponse à la fourniture du message de données à l'appelant ou aux appelants suivant(s), placement d'un appel téléphonique sur l'utilisateur et annonce du fait que le message de données a été délivré à l'appelant ou aux appelants suivant(s).

6. Procédé selon la revendication 5, dans lequel l'étape d'annonce est en outre caractérisée par l'étape d'identification de l'identificateur associé au message de données de délivrance.

7. Procédé selon l'une quelconque des revendications précédentes, caractérisé en outre par l'étape de, en réponse à une réception d'un appel suivant en provenance de l'utilisateur et à une réception de l'unique identificateur ou des uniques identificateurs, fourniture à l'utilisateur d'une information indicative de si le message de données associé a été fourni à l'appelant ou aux appelants suivant(s).

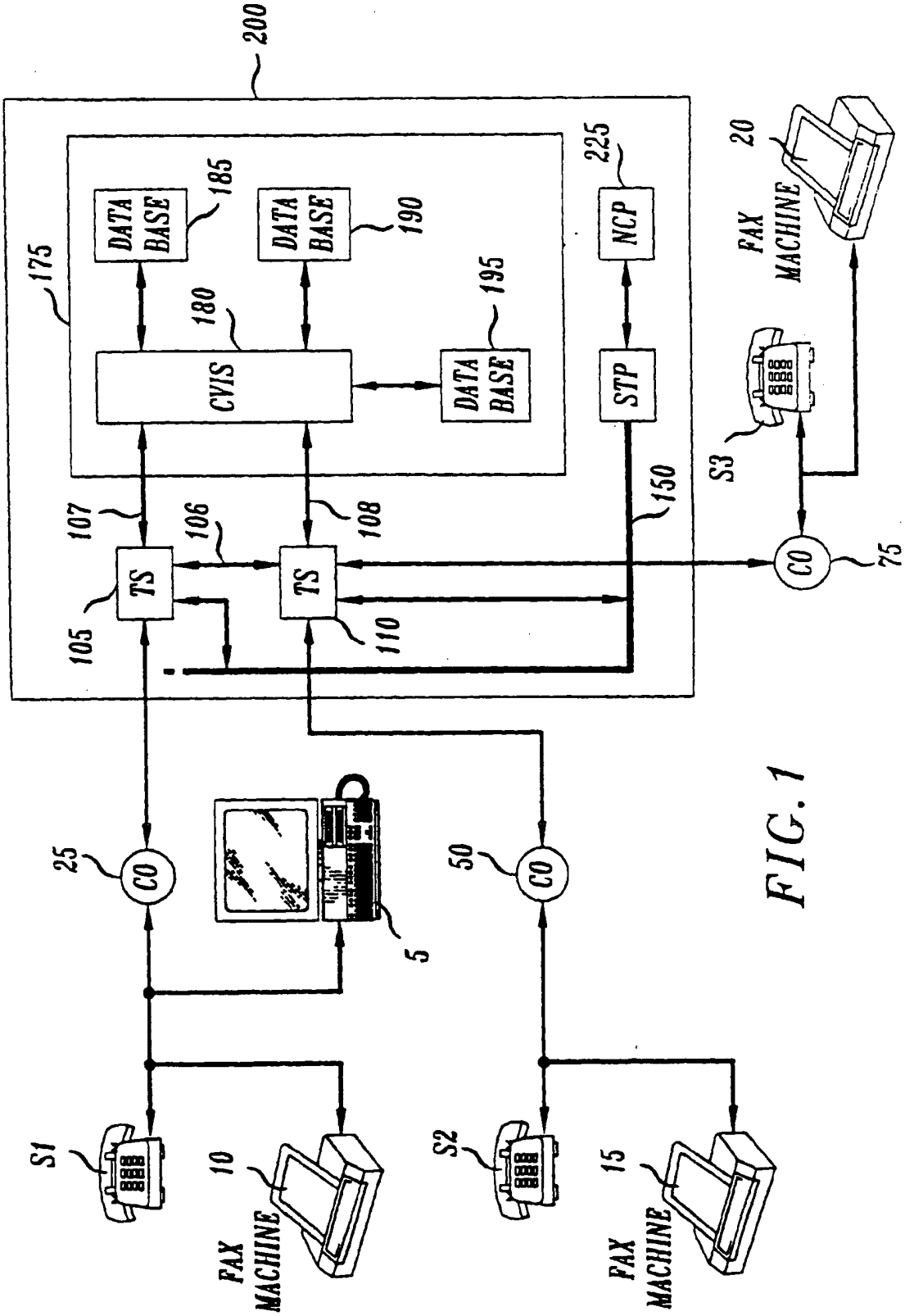

200
175
DATA BASE
185
DATA BASE
190
225
NCP
180
CVIS
195
DATA BASE
STP
107
106
108
150
TS
TS
CO
105
110
75
S3
FAX MACHINE
20
25
CO
50
CO
5
S1
10
FAX MACHINE
S2
15
FAX MACHINE

FIG. 1

FIG.2

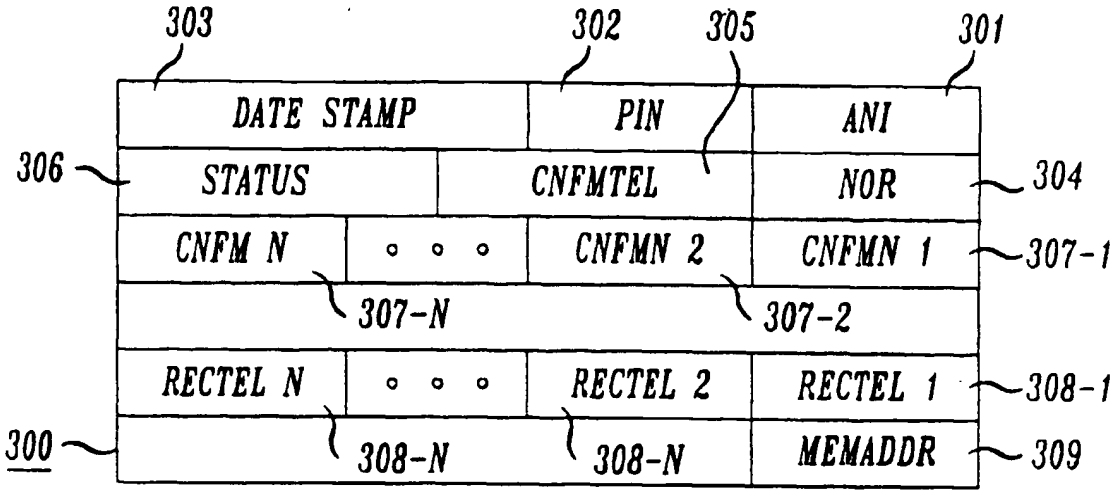
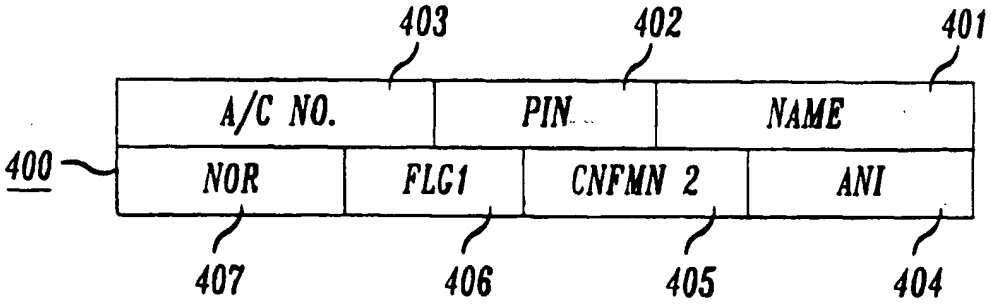

303
302
305
301
DATE STAMP
PIN
ANI
306
STATUS
CNFMTEL
NOR
304
CNFM N
CNFMN 2
CNFMN 1
307-1
307-N
307-2
RECTEL N
RECTEL 2
RECTEL 1
308-1
300
308-N
308-N
MEMADDR
309

FIG.3


403
402
401
A/C NO.
PIN
NAME
400
NOR
FLG1
CNFMN 2
ANI
407
406
405
404

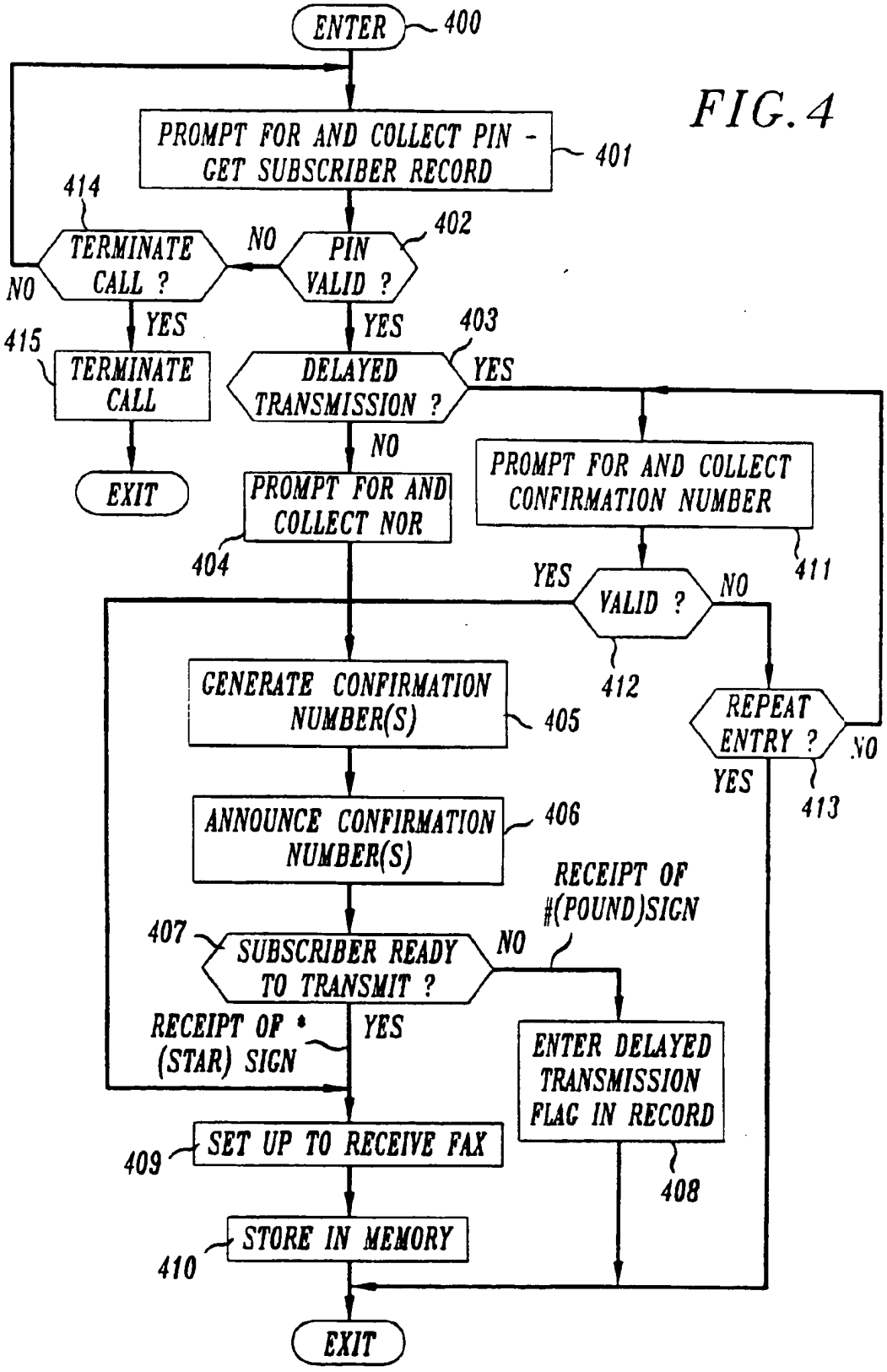

ENTER
400
PROMPT FOR AND COLLECT PIN - GET SUBSCRIBER RECORD
401
414
TERMINATE CALL ?
NO
NO
PIN VALID ?
402
YES
YES
415
TERMINATE CALL
403
DELAYED TRANSMISSION ?
YES
NO
EXIT
PROMPT FOR AND COLLECT NOR
404
PROMPT FOR AND COLLECT CONFIRMATION NUMBER
411
YES
VALID ?
NO
412
GENERATE CONFIRMATION NUMBER(S)
405
REPEAT ENTRY ?
NO
YES
413
ANNOUNCE CONFIRMATION NUMBER(S)
406
RECEIPT OF #(POUND)SIGN
407
SUBSCRIBER READY TO TRANSMIT ?
NO
RECEIPT OF * (STAR) SIGN
YES
ENTER DELAYED TRANSMISSION FLAG IN RECORD
408
409
SET UP TO RECEIVE FAX
STORE IN MEMORY
410
EXIT

FIG. 4

FIG.5

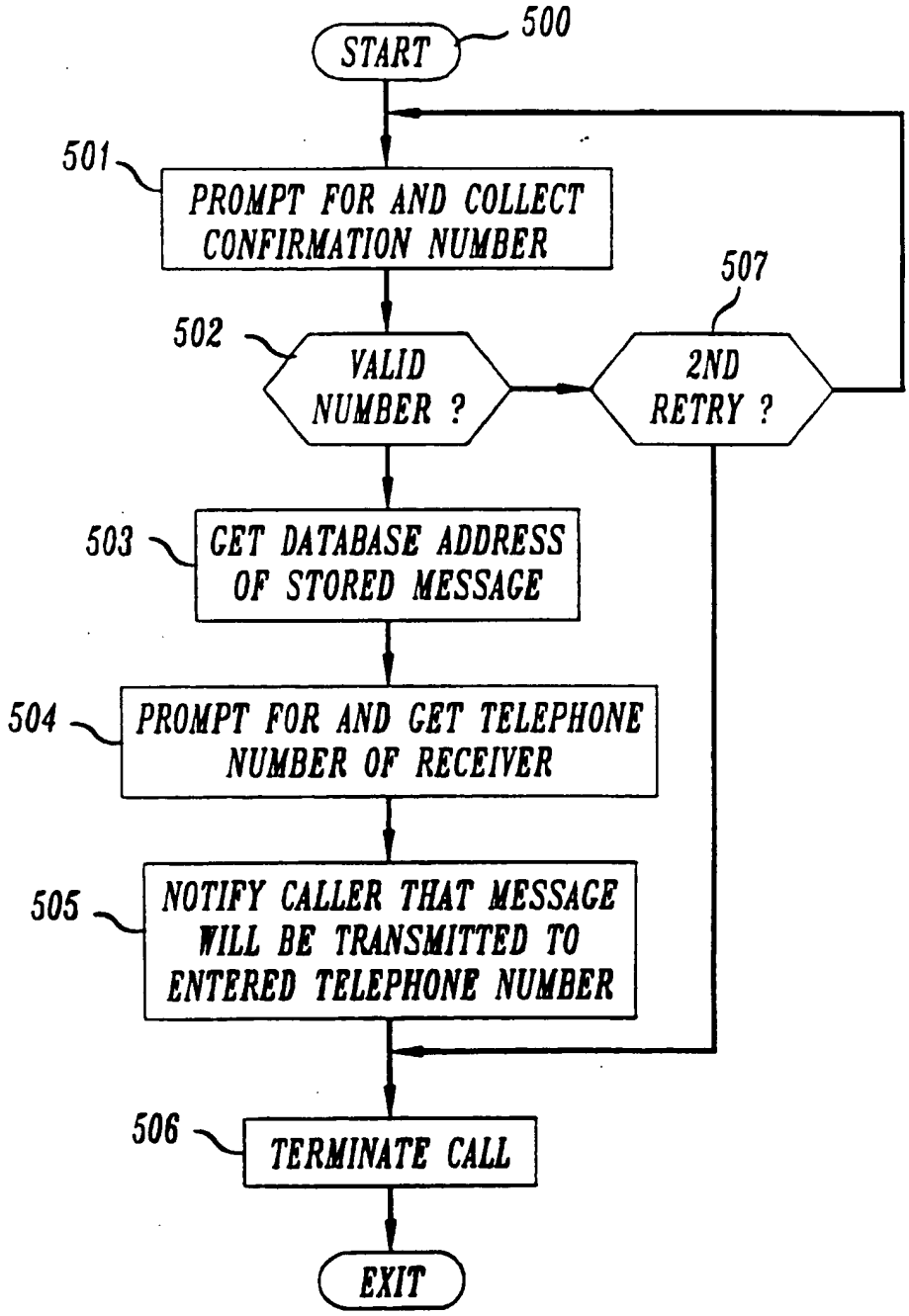

START
500
501
PROMPT FOR AND COLLECT CONFIRMATION NUMBER
502
VALID NUMBER ?
507
2ND RETRY ?
503
GET DATABASE ADDRESS OF STORED MESSAGE
504
PROMPT FOR AND GET TELEPHONE NUMBER OF RECEIVER
505
NOTIFY CALLER THAT MESSAGE WILL BE TRANSMITTED TO ENTERED TELEPHONE NUMBER
506
TERMINATE CALL
EXIT

FIG. 6

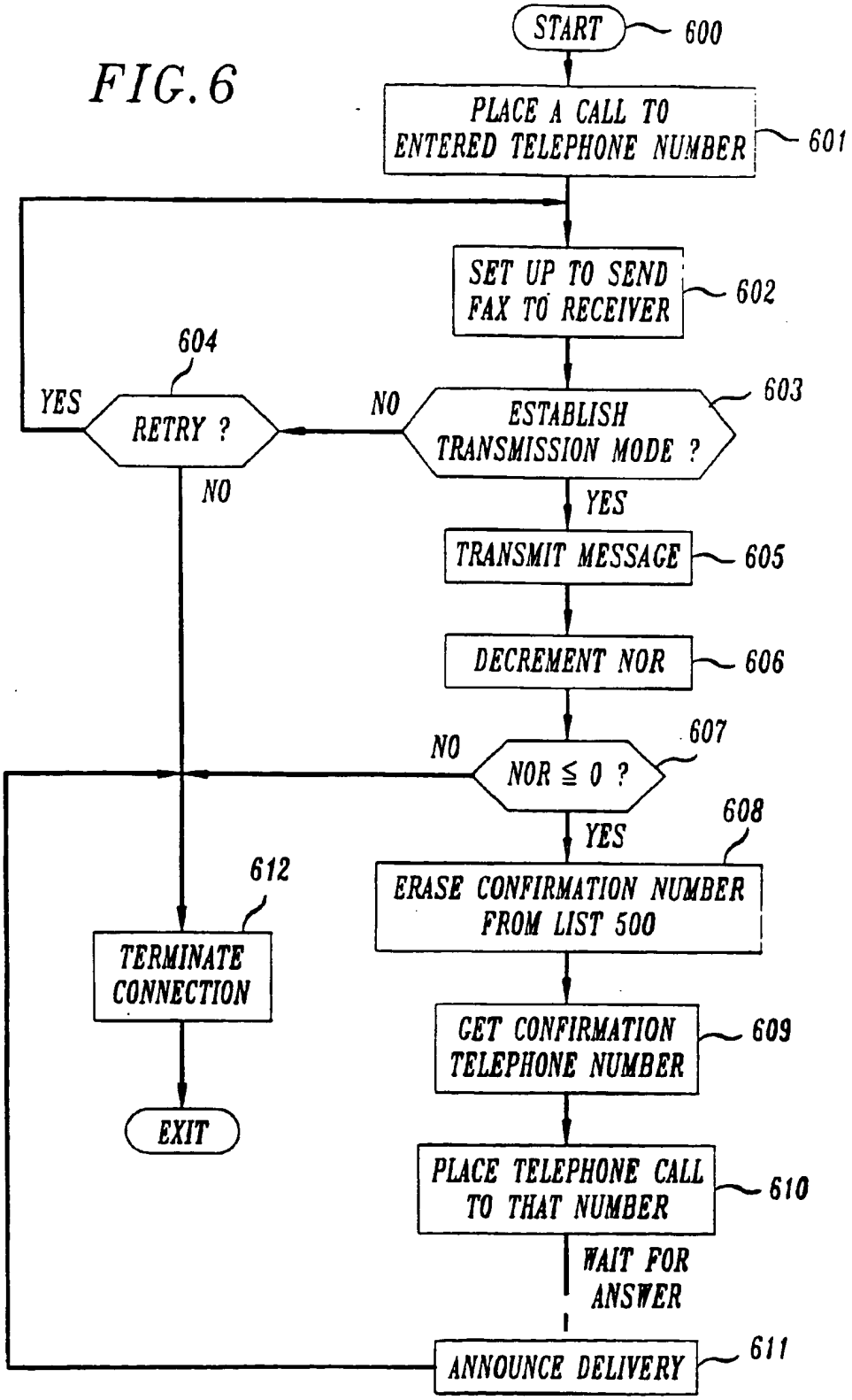
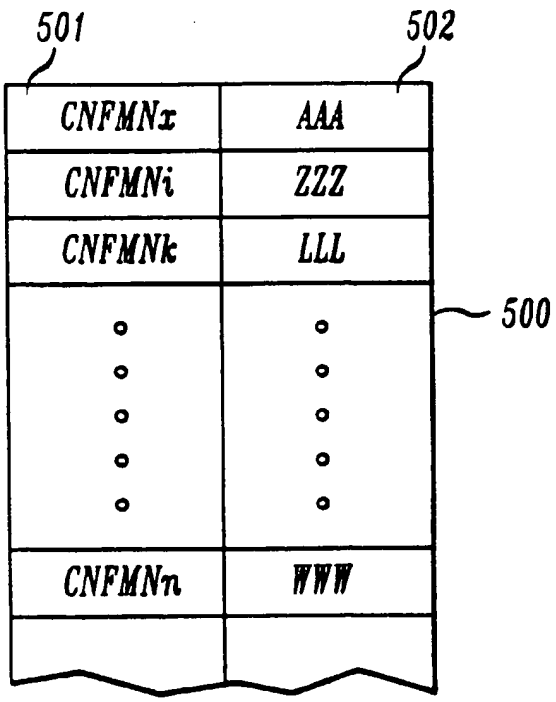

START
600
PLACE A CALL TO ENTERED TELEPHONE NUMBER
601
SET UP TO SEND FAX TO RECEIVER
602
ESTABLISH TRANSMISSION MODE ?
603
NO
YES
RETRY ?
604
YES
NO
TRANSMIT MESSAGE
605
DECREMENT NOR
606
NOR ≦ 0 ?
607
NO
YES
ERASE CONFIRMATION NUMBER FROM LIST 500
608
GET CONFIRMATION TELEPHONE NUMBER
609
PLACE TELEPHONE CALL TO THAT NUMBER
610
WAIT FOR ANSWER
ANNOUNCE DELIVERY
611
TERMINATE CONNECTION
612
EXIT

FIG. 7



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